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ABSTRACT

Criticisms have been directed at the quality of professionals entering the teaching field, with the implication that higher quality students pursue degrees other than education and that the academically less talented gravitate toward the teaching profession. To test this idea, a study was conducted to determine if significant differences exist in academic performance between individuals who receive their degrees in education and those who receive Bachelor of Arts, Bachelor of Science, or Bachelor of Business Administration degrees. This study examined academic histories of individuals who received their degrees in education and of those who pursued degrees in nonteaching areas (English, mathematics, history, geography, and biology). From a total of 849 graduates receiving degrees in August 1990 and May 1991, 200 who had obtained undergraduate degrees in the four degree categories were selcted for the study. Fifty students were randomly chosen from each degree category, and respective transcripts were reviewed to determine each subject's performance in a content area. Findings suggest that some differences in academic performance were observed, favoring students outside of teacher education. Only in History 1 of the general studies program did teacher education graduates outperform other students. Future study is recommended to explore whether individuals entering the field of education are as academically talented as other majors in order to provide information regarding an observed trend toward attracting better students to teacher training programs. (LL)

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# *"A Comparison of Academic Performance of Teacher Education Students and Other Majors on Specific General Education Courses"*

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A Comparison of Academic Performance of Teacher Education Students and Other Majors on Specific General Education Courses

## The Problem

The 1980's was a decade of educational reform. The call for educational reform was based, in part, on the lack of expected student achievement, questionable effectiveness of classroom teachers, and the efficacy of teacher training programs. Foundations (Carnegie, 1986) outside the profession of education appealed for changes in the manner which classroom teachers were prepared.

A contingent of those voices for change questioned the degree to which classroom teachers acquired sufficient mastery of the content for which they would, eventually, have responsibility for teaching (Schlecty & Vance, 1981). In their opinion, the educational system could be salvaged by employing individuals who had degrees in content areas or in the liberal arts. Such recommendations emphasized the mastery of specific content rather than training in the process of instruction. Specific to that recommendation was the hope that individuals who were more academically talented would become more effective teachers.

Some reports suggested the education profession was not attracting and retaining (Schlecty & Vance, 1981) high quality students. The implication was that higher quality students pursued degrees in areas other than education, or that intellectually less facile and academically less talented students gravitated toward the teaching profession. Some of these claims have been made in the absence of data by which to conceptualize and frame the argument regarding the quality of teacher education students (Reynolds, 1982). To date, however, few

investigations have compared the academic integrities between teacher education students and those students pursuing degrees in nonteaching areas.

This investigation sought to determine if significant differences existed in academic performance in general studies courses between individuals who received their degrees in education (BSE) and those individuals receiving Bachelor of Arts, Bachelor of Science, and Bachelor of Business Administration degrees. The decision to select graduates for the study was based, in part, on wanting to examine the academic backgrounds of individuals at entry levels of the profession.

Since many of the criticisms were directed at the quality of professionals entering the field of teaching, it was decided to examine their academic histories in subject areas of general studies such as English, math, history, geography, and biology.

The Subjects

The subjects selected for this investigation were students who received their undergraduate degrees during the August, 1990 and May, 1991 graduations. From a total of 849 graduates, 200 graduates were randomly selected for further analysis. They were selected according to the category of the degree obtained at graduation. Subjects selected for the study obtained their undergraduate degrees under the following degree categories: Bachelor of Science in Education (teacher education), Bachelor of Arts, Bachelor of Science, and Bachelor of Business Administration.

From the roles of the graduating classes, fifty students were randomly selected from each of the four degree categories. Once the random selections were made to each of the four degree categories, their respective transcripts were reviewed to determine the grades they obtained

in the following general studies' courses: English 1, English 2, History 1, History 2, Math, Geography, and Biology. These courses were selected in order to determine each subject's performance in a content area. The mean, variance, and standard deviation was calculated for each degree category on each of the reviewed courses and presented in tabular form.

Table 1 was constructed to profile teacher education students by depicting the mean grade point average for BSE students for each of the general education courses.

## Means, Variance and Standard Deviations

### Acquired Grades for BSE in General Studies

*Table 1*

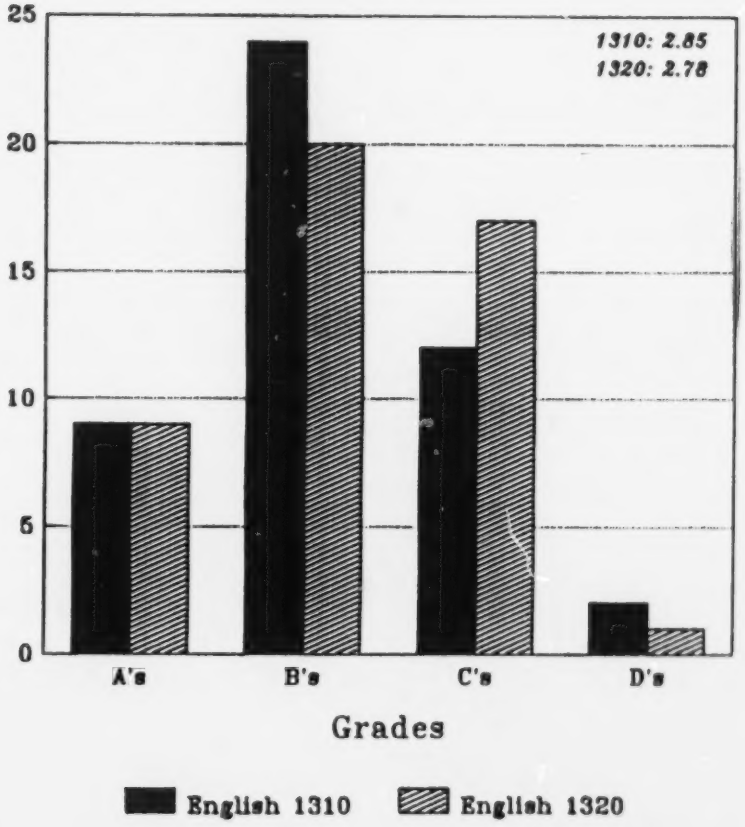
| *Course* | Mean GPA | Variance | Standard Deviation |
|---|---|---|---|
| Eng.1 | 2.8510 | 0.6077 | 0.7795 |
| Eng.2 | 2.7872 | 0.6059 | 0.7784 |
| Hst.1 | 2.7446 | 1.1507 | 1.0727 |
| Hst.2 | 2.3260 | 0.8468 | 0.9202 |
| Math | 2.7560 | 0.8890 | 0.9428 |
| Geog. | 2.5833 | 0.7071 | 0.8409 |
| Biol. | 2.3023 | 0.7873 | 0.8873 |

BSE Academic Profile. Of the seven general studies courses reviewed, the BSE students acquired their best grades in the first course of freshman English. They acquired an average grade point of 2.85. As shown in Table 1, their lowest average grades were acquired in the second course of World History and General Biology. The means, variances, and standard deviations were calculated on 50 students obtaining their BSE degrees. Figures 1 through 5 depict the grade distribution of the 50 BSE students in the seven courses.

# Obtained Grades (BSE)

## Freshmen English

*Figure 1*



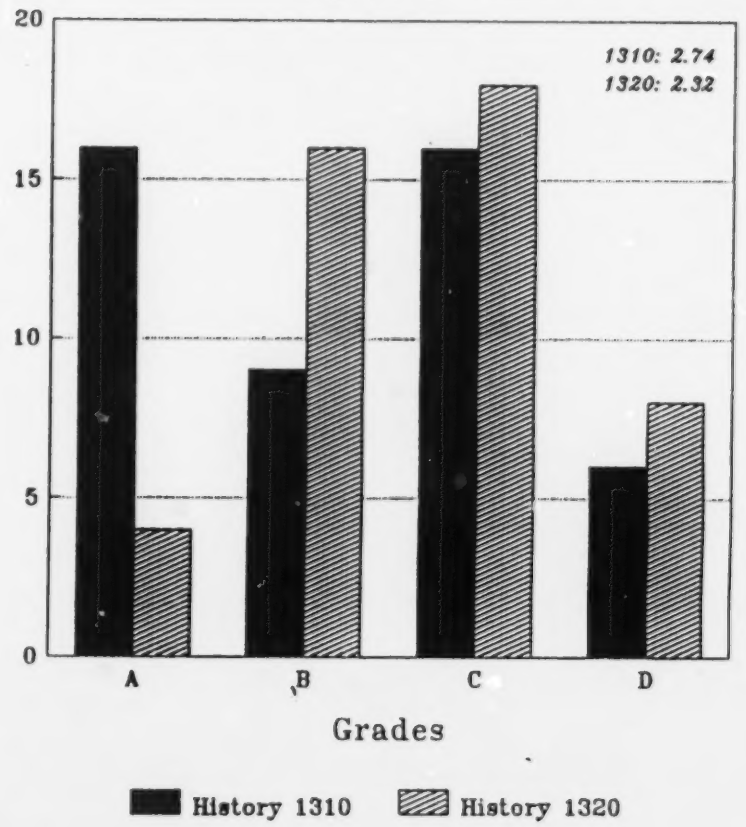

1990-91 Graduating Class



# Obtained Grades (BSE)

## Freshmen History

*Figure 2*

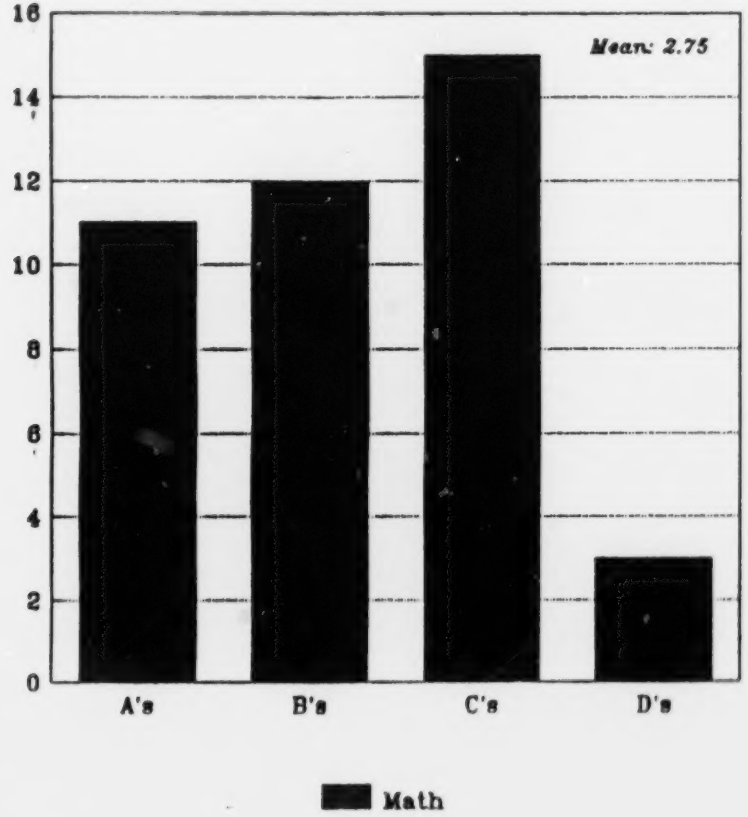



1990-91 Graduating Class

# Obtained Grades (BSE)

## Freshmen Math

*Figure 3*

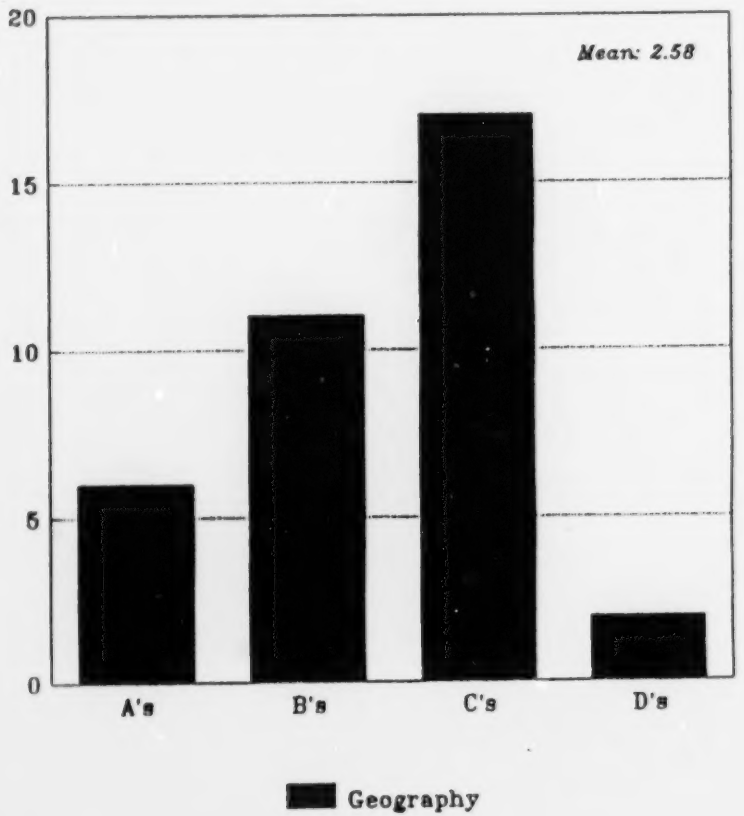





# Obtained Grades (BSE)

## Freshmen Geography

*Figure 4*

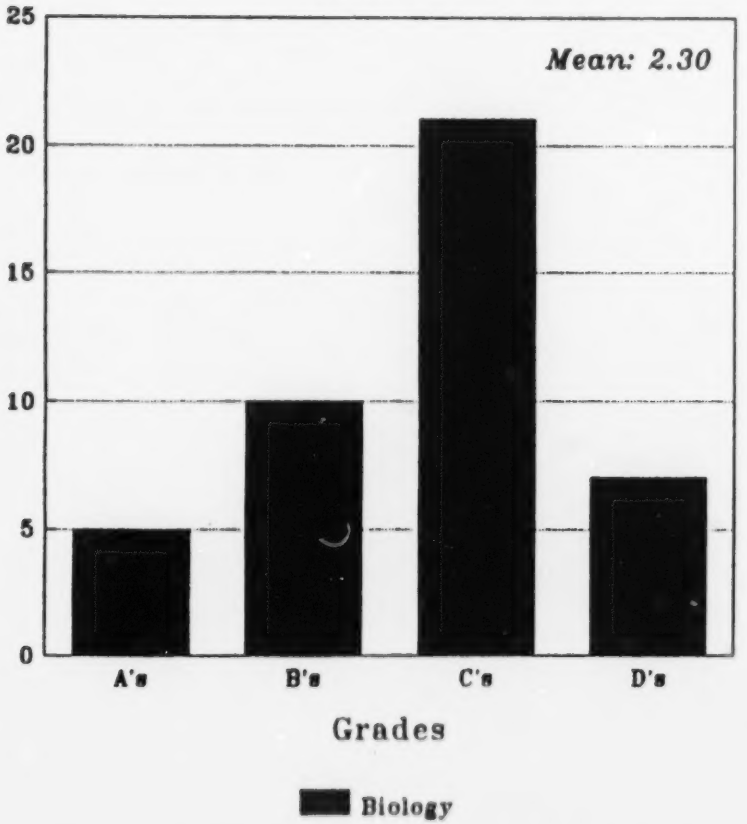



**1990-91 Graduating Class**

# Obtained Grades (BSE)

## Freshmen Biology

*Figure 5*




1990-91 Graduating Class

Comparisons of BSE and BA Students. In an effort to determine if significant academic differences existed between students pursuing degrees in teacher education and those pursuing curricula leading to the Bachelor of Arts degree, the means, variances, and standard deviations were also calculated for fifty randomly selected BA students. A t test was used to determine if significant differences existed for each of the mean grades obtained by BSE and BA students on the seven selected courses. Table 2 shows the comparisons of the mean grades between the two groups, the calculated t's, and the notations of levels of significance.

## Comparison of BSE & BA Graduates
### Acquired Grades on General Education Courses
*Table 2*

| Course | BSE | | BA | | $t$ |
|---|---|---|---|---|---|
| | Mean | Std.Dev | Mean | Std.Dev | |
| Eng. 1 | 2.8510 | 0.7795 | 3.2666 | 0.8090 | -11.889** |
| Eng. 2 | 2.7872 | 0.7784 | 3.1086 | 0.7667 | - 9.568** |
| Hst. 1 | 2.7446 | 1.0727 | 2.7400 | 0.8762 | 0.114ns |
| Hst. 2 | 2.3260 | 0.9202 | 2.6938 | 1.0247 | - 8.880** |
| Math | 2.7560 | 0.9428 | 2.7045 | 0.9783 | 1.126ns |
| Geog. | 2.5833 | 0.8409 | 2.6551 | 0.8974 | -1.301ns |
| Biol. | 2.3023 | 0.8873 | 2.2352 | 1.0461 | 1.281ns |

* *.05 Level of Confidence*

** *.001 Level of Confidence*

As shown in Table 2, significant differences existed between the two groups on three of the general studies courses. The BA students performed significantly better in English 1 and 2 and in the second course in World History. The observed differences in these three courses were shown to be significant at the .001 level. No significant differences, however, were observed in the attained grades for the other four general studies

courses.

Of the seven courses reviewed, it was observed that the BA sample was the only group obtaining a mean grade of B (3.00) on any of the courses. The BA sample obtained a mean grade of 3.27 in English 1 and an average grade of 3.11 in English 2.

Comparison of BSE and BS Students. In an effort to determine if significant academic differences existed between students obtaining degrees in teacher education and those completing curricula leading to the Bachelor of Science degree, the means, variances, and standard deviations were also calculated for fifty randomly selected BS students. To determine if significant differences existed between BSE and BS students in acquired grades in the selected general studies courses, a t test was used.

Table 3 shows the comparisons of the mean grades between the two groups, the calculated t's, and the notations of the levels of significance.

## Comparison of BSE & BS Graduates
### Aquired Grades on General Education Courses

*Table 3*

| | BSE | | BS | | |
|---|---|---|---|---|---|
| *Course* | Mean | Std.Dev | Mean | Std.Dev | *t* |
| Eng. 1 | 2.8510 | 0.7795 | 2.9047 | 0.9320 | - 1.363ns |
| Eng. 2 | 2.7872 | 0.7784 | 2.8409 | 0.7453 | - 1.584ns |
| Hst. 1 | 2.7446 | 1.0727 | 2.8409 | 0.9631 | - 2.125 * |
| Hst. 2 | 2.3260 | 0.9202 | 2.8666 | 0.8146 | -14.002** |
| Math | 2.7560 | 0.9428 | 2.8611 | 1.0731 | - 1.598ns |
| Geog. | 2.5833 | 0.8409 | 3.0000 | 0.7669 | - 6.165** |
| Biol. | 2.3023 | 0.8873 | 2.6250 | 0.9418 | - 6.350** |

* *.05 Level of Confidence*
** *.001 Level of Confidence*

As shown in Table 3, significant differences in acquired grades were observed on four of the seven general studies courses. The BS students performed significantly better in both courses of freshman History, Geography, and General Biology. The differences between the two groups in History 2, Geography, and Biology were significant at the .001 level. The difference between the two groups in acquired grades in History 1 was significant at the .05 level of confidence.

No significant differences between the two groups were observed for acquired grades in English 1, English 2, and Math.

Comparison of BSE and BBA Students. In an effort to determine if significant academic differences existed between students pursuing degrees in teacher education and those pursuing curricula leading to the Bachelor of Business Administration degree, the means, variances, and standard deviations were also calculated for fifty randomly selected BBA students. A t test was used to determine if significant differences existed for each of the mean grades obtained by BSE and BBA students on the seven selected

## Comparison of BSE & BBA Graduates
### Acquired Grades on General Education Courses
*Table 4*

| | BSE | | BBA | | |
|---|---|---|---|---|---|
| *Course* | Mean | Std.Dev | Mean | Std.Dev | *t* |
| Eng. 1 | 2.8510 | 0.7795 | 2.8222 | 0.8059 | 0.826ns |
| Eng. 2 | 2.7872 | 0.7784 | 2.8478 | 0.7591 | - 1.812ns |
| Hst. 1 | 2.7446 | 1.0727 | 2.5319 | 0.8559 | 5.097** |
| Hst. 2 | 2.3260 | 0.9202 | 2.4565 | 0.8355 | - 3.376** |
| Math | 2.7560 | 0.9428 | 2.7692 | 0.8098 | - 0.295ns |
| Geog. | 2.5833 | 0.8409 | 2.5555 | 0.9217 | 0.363ns |
| Biol. | 2.3023 | 0.8873 | 2.3125 | 1.0144 | - 0.117ns |

* *.05 Level of Confidence*
** *.001 Level of Confidence*

general studies courses. Table 4 depicts the comparisons of the mean grades between the two groups, the calculated t's, and the notations of the levels of significance.

As shown in Table 4, significant differences were observed between the two samples on two of the general studies courses. The BSE students obtained significantly higher grades than the BBA students in World History 1. However, BBA students obtained significantly higher grades than the BSE students in World History 2. In both cases, the differences in acquired grades was at the .001 level of confidence. No significant differences were observed between the two samples in the other five academic areas.

Discussion

This investigation sought to determine if individuals entering the field of education were as academically talented as individuals pursuing degrees in nonteaching areas. When comparing teacher education students with students completing the requirements for BA, BS, and BBA degrees, some differences in academic performance were observed. In several instances, the differences in academic skills favored students outside of teacher education. In only one instance did the graduates in teacher education perform significantly better than other students. This difference was found in History 1. On this general studies' course, the BSE students had significantly better grades than BBA students. This finding, however, is perplexing to the investigators since BBA students out-performed BSE students in World History 2.

Reaching the conclusion that students in teacher education programs are relatively poor students would be a conclusion that would seriously over-fit the data. Any consideration that BA and BS students, as a group,

are significantly better than teacher education students must be viewed in terms of the specific content areas in which the groups were compared. Since the average grade made by the three groups on most of the selected general studies' courses was a C, one should conclude that the graduating classes are, actually, average students with some groups having a higher C than others. Table 5 shows a summary of the courses in which the students from the other degree areas out performed teacher education students.

## Summary of Academic Performance

BSE with BA/BS/BBA

*Table 5*

| Course | Performed Better Than BSE Students |
|---|---|
| Freshman English 1 | BA |
| Freshman English 2 | BA |
| World History 1 | BS |
| World History 2 | BA, BS, BBA |
| Math | None |
| Geography | BS |
| Biology | BS |

BSE & BA Students. Any discussion of academic differences between teacher education students and those obtaining BA degrees should be relegated to performance in the humanities. In areas of math, geography, and biology, the data did not support critic's claims and contentions that teacher education students are academically inferior. This finding has been previously substantiated (Krockover, et al, 1988; Johnson & Chissom 1990).

BSE & BS Students. From the data obtained in this investigation, students obtaining BS degrees performed, academically, at a higher level than BSE students in four of the seven selected general studies courses. When compared to teacher education students, BS students obtained significantly higher grades in History 1, History 2, geography, and biology. The higher grades in geography and biology might be predicted since the BS degree requires specific coursework in the sciences. With the exception of the BSE students' lower grades on World History 2, BSE students performed, academically, as well as BS students in the humanities.

BSE & BBA Students. From the data obtained in this investigation, it appeared that BSE and BBA students were very comparable in their academic performances. This finding was inferred since no significant differences were observed in five of the seven selected general studies courses. The only differences between the two samples were observed in their grades in the two history courses.

Conclusions

Although the data for each of the groups indicated that the mean grade on most of the courses was in the range of C, significant differences between the BSE group and the BA and BS groups might be attributable to the possibility that the latter samples had more members receiving grades in the ranges of A and B. Therefore, one might conclude that BA and BS students could be predicted to receive more grades in the upper stratifications of acquired grades. Investigations in the future might focus on comparing the samples on the basis of observed stratifications of acquired grades.

Recommendations

Future investigations regarding the comparison of teacher education

students with other majors might consider increasing the sample size to include students from more than one institution of higher education. This would assist in accounting for differences in performance relative to a specific institution's admission standards, training expectations, and academic standards.

More information might be obtained through a comparison of academic performance from students in different strands of teacher education with students completing requirements for BA, BS, and BBA degrees. Such information would allow the investigators to make comparisons of specific components of teacher preparation students.

It may also be beneficial to consider different statistical treatments of the data. Perhaps the use of a factorial design would yield more information than was obtained in this investigation. A factorial design might help in accounting for and explaining the variance in the dependent variables.

Investigators might concentrate their research efforts on determining whether teacher education is attracting increasingly more academically talented students since the advent of the trend toward increased standards for admission to teacher education programs. This would provide valuable information regarding an observed trend toward attracting better students to teacher training programs.

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